**Physics Project: Design, Conduct, Collect Results and Analyze Motion**

1. Brainstorm
   1. Find 3 types of motion that interest you.
   2. Think of ways to measure and/or modify the motion
   3. Consider all the instruments that will be needed to collect your information
2. Choose one experiment. Explain what you are trying to determine, how you will collect your data and how that data will be analyzed.
3. Planning your experiment
   1. Make detailed notes on the planning/construction.
      1. What do you want to determine?
      2. How will it be measured?
      3. What instruments will you need?
   2. What formulas will you need to use?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. [](http://www.google.com/imgres?q=poison+symbol&hl=en&safe=active&sa=X&tbo=d&rls=com.microsoft:en-us:IE-SearchBox&biw=1024&bih=582&tbm=isch&tbnid=d0qKrBieO2DfGM:&imgrefurl=http://www.wpclipart.com/medical/symbols/poison_sign.png.html&docid=pUc5rEDDBX7YVM&imgurl=http://www.wpclipart.com/medical/symbols/poison_sign.png&w=400&h=331&ei=tT0JUc2vBcuZqQHW0ICgBA&zoom=1&iact=hc&vpx=388&vpy=120&dur=969&hovh=204&hovw=247&tx=136&ty=111&sig=107695742398537293001&page=1&tbnh=140&tbnw=170&start=0&ndsp=20&ved=1t:429,r:3,s:0,i:92)What materials will be used? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. **What hazards are associated with the experiment? What steps are you taking to ensure the safety of yourself and others? What will need to be approved?**
4. Draw a diagram on poster paper or take a picture to explain to the class how your experiment was set up, and the results.
5. You will present your report to the class and explain your drawing, results and conclusion.
6. Use the rubric below as a guide to improve your research and presentation.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CONDUCTED THE LAB** | | **40 points** | **Your Points** | | **Proof lab was conducted** | | | |
| **Motion Speech** | | **4** | **3** | | **2** | | **1** | **0** |
| **Introduction/ explain visual** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Problem you were solving** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Problems you had to solve to do the experiment** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Explain Set up-** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Hazards and making it safe** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Explain steps in gaining data**  **Procedure** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Results/Data on table & graph** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Analysis /Conclusion** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **Biggest challenge/ Most fun** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
| **If I were to do this again, I would….** | | 3 + Examples | 2 + gave explanation | | Met requirements | | Missing major parts | Skipped it |
|  | | | | | | | | |
| **Motion Poster or Powerpoint (or other approved visual)** | | | | | | | | |
| **20 points** | **4** | | | **3** | | **2** | | **1** |
| **State Problem & hypothesis** | Well stated with supporting info | | | Met requirements | | Missing major parts | | Skipped it |
| **label visual w/materials** | Picture/video- labeled/described | | | Met requirements | | Missing major parts | | Skipped it |
| **Drawing/Visual** | **X** | | | Picture/video - Neat | | Met requirements | | Skipped it |
| **Give formulas used** | Formulas & symbols explained | | | Met requirements | | Missing major parts | | Skipped it |
| **Data Table & Graph** | Table & graph present | | | Only 1 given | | Missing major parts | | Skipped it |
| **Analysis** | Analysis used supporting info | | | Met requirements | | Missing major parts | | Skipped it |
| **Conclusion** | 3 + Hypothesis verified, supporting info | | | Met requirements | | Missing major parts | | Skipped it |

Speech/Presentation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total 100 points-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conducting the Lab- 40 points- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Poster/PPT \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_